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## Satisfaction in academically vulnerable students: a quality factor in a program aimed at leveling basic skills

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### Abstract

This research assessed the satisfaction among academically vulnerable students in the process of leveling basic skills in University context (2009 – 2013). The sample consisted of 321 first year students from all the different courses in the university. A satisfaction questionnaire was used with intervention strategy. The results show increasing and progressive stability of student satisfaction, which supports the decisions of innovating. The research highlights the importance of students' participation in the improvement of their learning process.

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**Key words:** Student satisfaction, leveling basic skills, Higher Education.

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### 1. Introduction

Massive access to higher education in Chile has required the integration of groups of very heterogeneous students with diverse intellectual capacities and skills, for them to succeed through university life. This phenomenon has produced important demands to higher education institutions, as they have been forced to introduce plans and programs to level generic and basic skills in order to decrease failure, withdrawal, and extension of time for graduation.

Diagnoses made at Universidad de Playa Ancha revealed that a high percentage of the students obtain low

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levels of achievement in oral and written Spanish language skills and Math tests (Dapelo & Magnère, 2010; Dapelo & Marcone, 2013a).

These students come from low socioeconomic levels (Q1 and Q2), they have studied in public schools (public and subsidized schools) and their scores in university selection tests (PSU) are between 500 and 600 points, information that confirms their academic vulnerability. In this context, it is relevant to develop a university program aimed at leveling basic skills, as an opportunity to support the students addressing their vulnerability. For this reason, since 2009 the “*Development of strategic skills for university training*” workshop has been implemented. The workshop, which includes modules on Effective academic communication, Logical mathematical thinking, Critical and Scientific Thinking and Learning Management; involves contents from each course, development of linguistic skills, logical thinking and math problem solving, and suitable attitudes towards academic work (Dapelo & Marcone, 2013b).

Since the understanding of students’ needs is important to develop environments in which they can learn effectively and meet their expectations (Gerdes & Mallinckrodt, 1994), since 2010 we have encouraged the active participation of students and facilitators in a continuous evaluation process for quality improvement. Based on this feedback, substantial changes have been made to the learning environment, technology and furniture, in order to promote collaborative and reflective work among peers. Outstanding senior students were incorporated as learning facilitators (Briskin & Anderson, 1973; Kern & Kirby, 1971; Myrick & Bowman, 1981a, 1981b; Sanz Oro, 2001; Topping, 1996; Goodlad & Hirst, 1989; Colvin, 2007; Lopez & Flores, 2009; Dapelo & Marcone, 2013b), who were trained to promote ownership of team learning strategies, assessment and management of cognitive and motivational resources.

Considering the lessons learned from previous processes of leveling basic skills and students’ satisfaction, we redesigned the 2013 workshop focusing on: a) academic support needs of students in key subjects (i.e. areas of higher failure rate), b) conceptual development and practice of skills in virtual platform prior to each session, and, c) use of clickers as a resource for knowledge activation, achievements checking, progress and error analysis (Mazur, 2012). These changes were intended to meet the expectations of students, facilitate their personal satisfaction, acceptance, and the value assigned by peers to the effort made during the learning process; with psychological implications on self-esteem and academic achievement (Arias & Flores, 2005; Salinas, 2007; Feixas, Gairín, Muñoz & Guillamón, 2010; Solar, 2010).

We decided to pay particular attention to students’ satisfaction, because several researchers establish that student satisfaction reflects the efficiency of the different aspects of their educational experience (Gento & Vivas, 2003; Salinas, 2007; Alves & Raposo, 2005; Schreiner, 2009; Maddox & Nicholson, 2013) and that it has an impact on motivation, retention, and academic performance (Elliot & Shin, 2002; Schreiner, 2008).

In this context, this study aims to analyse the stability and change in satisfaction rates towards a program aimed at leveling basic skills in Universidad de Playa Ancha, Valparaíso, Chile, among academically vulnerable freshman students; in order to verify whether the 2013 intervention reported higher student satisfaction. Our hypothesis is that the redesign of the workshop, with emphasis on the student’s previous preparation and incorporation of interactive methodologies, is effective to the extent that increases student satisfaction, reducing levels of dissatisfaction. For this purpose, the results of student satisfaction surveys from 2009 to 2013 are compared.

## 2. Method and finding

A total 321 first year students (2009, 2010, 2012 and 2013 promotions) answered the satisfaction questionnaire (four aspects: Satisfaction towards the learning experience, Peer instructors, Learning context and Attitude towards learning). The questions are answered using a four level scale: High Satisfaction (4), Satisfaction (3), Low satisfaction (2) and Dissatisfaction.

The reliability of the instrument fluctuates between .92 and .94 (Cronbach’s SPSS 21), reliability of each aspect moves between .881 and .823.

Table 1. Chart 1: Satisfaction among students according to aspects of questionnaire

Aspects	Year	Dissatisfied	Low satisfied	Satisfied	Highly satisfied
Satisfaction towards the learning experience	2009	7.10%	28.60%	57.10%	7.10%
	2010	0.00%	0.00%	75.00%	25.00%
	2012	0.00%	13.60%	69.10%	17.30%
	2013	3.30%	13.60%	62.90%	20.20%
Satisfaction towards peer instructors	2009	7.10%	14.30%	71.40%	7.10%
	2010	0.00%	0.00%	100.00%	0.00%
	2012	9.90%	17.30%	69.10%	3.70%
	2013	5.10%	12.10%	69.60%	13.10%
Satisfaction towards learning context.	2009	9.10%	18.20%	63.60%	9.10%
	2010	0.00%	0.00%	75.00%	25.00%
	2012	0.00%	11.10%	71.60%	17.30%
	2013	3.80%	8.50%	65.30%	22.50%
Satisfaction with attitude towards learning	2009	16.70%	8.30%	58.30%	16.70%
	2010	0.00%	8.30%	50.00%	41.70%
	2012	2.50%	7.40%	81.50%	8.60%
	2013	5.60%	7.90%	65.00%	21.50%

This chart shows that most of the students are satisfied and highly satisfied with the different aspects of the intervention strategy (from 64.2% to 100%), which reflects a stability that increases gradually as the experience takes place. It is important to take into consideration that at the beginning of the Leveling Plan (2009) the percentage of dissatisfied students reaches 25% and since 2010 there is a clear decrease in the percentage of dissatisfied students, with migration to higher levels of satisfaction.

To test for significant differences among groups we used the Kruskal Wallis test. To find out between which groups these differences occur, the Mann Whitney test was used comparing the groups two by two.

Table 2. Chart 2: Ranks (K differences independent samples)

	Entry year	N	Average Rank
Satisfaction towards the learning experience	2009	14	110.43
	2010	12	193.13
	2012	81	160.47
	2013	214	162.71
	Total	321	
Satisfaction towards peer instructors	2009	14	102.11
	2010	12	117.08
	2012	81	114.29
	2013	214	185.00
	Total	321	
Satisfaction towards learning context.	2009	14	76.82
	2010	12	208.38
	2012	81	159.72

	2013	214	164.33
	Total	321	
Satisfaction with attitude towards learning	2009	14	103.93
	2010	12	204.75
	2012	81	170.90
	2013	214	158.54
	Total	321	

Table 3. Contrast Statistics Kruskal Wallis Test

	Satisfaction towards the learning experience	Satisfaction towards peer instructors	Satisfaction towards learning context.	Satisfaction with attitude towards learning
Square-chi	5.702	44.232	15.062	9.084
Gl	3	3	3	3
Sig. asintót.	.127	.000	.002	.028

a Kruskal-Wallis test

b Group variable:Entry year.

Since the critical level is lower than 0.05 can reject the assumptions of equality, and further explore the differences between groups for each dimension.

Table 4. Comparison among groups, Satisfaction towards peer instructors (U de Mann Whitney)

	Satisfaction towards peer instructors					
	2009	2009	2009	2010	2010	2012
	2010	2012	2013	2012	2013	2013
U de Mann-Whitney	58.500	502.000	764.000	442.500	688.000	4862.000
W de Wilcoxon	163.500	607.000	869.000	3763.500	766.000	8183.000
Z	-1.337	-.686	-3.147	-.502	-2.772	-5.904
Sig. asintót. (bilateral)	.181	.493	.002	.615	.006	.000
	.193(a)					

a Group variable: Entry year

Table 5. Comparison among groups, Satisfaction towards learning context (U de Mann Whitney)

	Satisfaction towards learning context					
	2009	2009	2009	2010	2010	2012
	2010	2012	2013	2012	2013	2013
U de Mann-Whitney	27.000	27.000	904.000	335.000	904.500	8439.000
W de Wilcoxon	132.000	132.000	1009.000	3656.000	23909.500	31444.000
Z	-2.942	-2.942	-2.491	-1.738	-1.727	-.350
Sig. asintót. (bilateral)	.003	.003	.013	.082	.084	.727
	.003(a)					

a Not corrected for ties

b Group variable: Entry year.

Table 6. Comparison among groups, Satisfaction towards learning attitude (U de Mann Whitney).

	Aspect Satisfaction towards learning attitude					
	2009 2010	2009 2012	2009 2013	2010 2012	2010 2013	2012 2013
U de Mann-Whitney	36.000	318.000	996.000	364.500	928.500	7993.000
W de Wilcoxon	141.000	423.000	1101.000	3685.500	23933.500	30998.000
Z	-2.479	-2.625	-2.105	-1.399	-1.618	-1.034
Sig. asintót. (bilateral)	.013	.009	.035	.162	.106	.301
	.013(a)					

a Group variable: Entry year

The information shows that satisfaction among students towards peer instructors increases significantly in 2013. On the other hand, context and attitude towards learning increases from 2010 on. Finally, a correlation between psychosocial (learning, peer instructors, attitude) and context aspects was performed and the two were highly correlated ( $r = 0.571$ ;  $p = 0.01$  bilateral).

### 3. Conclusion

The differences show that the satisfaction level of students towards peer instructors in 2013 is significantly higher than in previous years, probably due to the reorientation of its facilitating role by emphasizing the agency of the student, encouraging the acquisition of autonomy in understanding statements, information search, problem solving, and the assumption of a personal viewpoint on the topics worked in the session. Experiences conducted in this and other universities have shown that learning facilitators are effective agents in the learning process of their peers. In this regard, it has been documented that peer tutoring in Higher education is being used with increasing frequency to aid in student learning, motivation, and empowerment (Colvin, 2007). It is very likely that this strategy has had an impact on the levels of student satisfaction, given the increase in satisfaction reported after the implementation of a set of decisions addressing the limitations detected in the initial diagnosis.

In addition, the findings show an improvement in student satisfaction from 2010, in regards to learning context, and attitude towards leveling processes. These improvements could be associated with the transition towards a management focused in students learning needs, increasing the efficiency by focusing on key subjects and the use of interactive methodologies with emphasis in adopting a proactive and reflective attitude (Mazur, 2012), in an academic environment of respect and motivational promotion (Elliot & Shin, 2002; Schreiner, 2008).

In general, the results show incremental and progressive stability in satisfaction dimensions, which may be interpreted as a consolidation of the changes from 2012 to 2013. These results could also reflect stability in the expectations of the students, most of whom have reported that the experience has been useful for better learning in the field of intervention involved, being consistent with those obtained by Solar (2010) in samples of Chilean university students with high vulnerability, with implications for the valuation of themselves and confidence in academic achievement.

The correlation among psychosocial and context aspects supports that efficient management in human, material and technological resources, facilitate learning in students. The redesign of virtual learning experiences, closely related to the learning processes of in person sessions, has encouraged autonomous practice of basic and analytical thinking skills and advancement in learning, required to reduce the initial gaps in competences.

The balance satisfaction/dissatisfaction highlights the value of student participation in the improvement processes: their satisfaction constitutes a quality factor associated to the modifications made to the design of the leveling program. In this regard, the preliminary experience of 2009 constituted a source of highly valuable information, the starting point for improving decision making, consistent with the aspects evaluated. This is how it is possible to establish that the timely assessment of student satisfaction constitutes a quality factor that provides meaning and transcendence to the organizational efforts towards generating better learning opportunities in educational contexts.

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